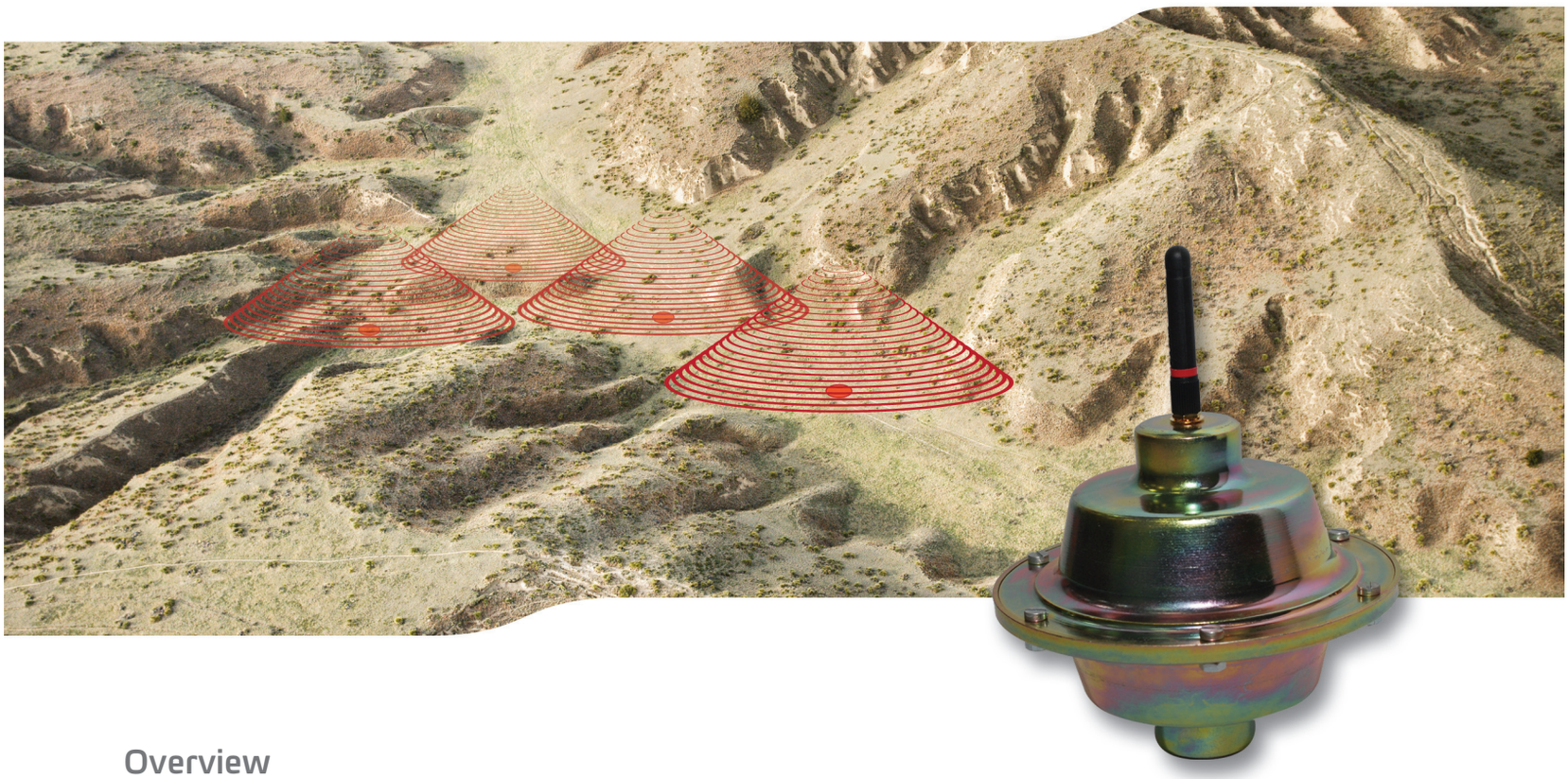
SAND

Smart All-Terrain Networked Detectors



Overview

SAND is an advanced, stand-alone, long-life, wireless security system that remotely monitors wide areas. The system detects and tracks both the movements of people - such as crawling, walking, running and approaches to security fences - as well as movements of all types of vehicles. Based on innovative seismic sensing technology, SAND can be used in any geophysical or environmental conditions. It is especially useful in difficult-to-observe areas, including hilly terrain, where line-of-sight monitoring is not feasible.

Applications

The SAND system meets the operational needs of a wide range of military and homeland security missions - including perimeter security, border control, surveillance and intelligence. It is also ideal for use in a variety of civilian applications, supporting the protection of national infrastructures, oil pipelines, construction sites, airports, prisons, factories, etc.

Elbit Systems
Land and C4I - Tadiran

SAND

Smart All-Terrain Networked Detectors

System Operation

Effectively monitoring large areas, the system's distributed sensor network consists of dozens of compact, scattered sensors that are either placed on the ground or buried at a shallow depth. Each wireless sensor is connected to a central communication unit which sends pre-processed data from all sensors in the covered area to a control center for analysis. If suspicious activity is detected, an alert is sent regarding a possible intrusion. The direction and path of suspected intruders is clearly displayed on an easy-to-use operator interface. SAND seamlessly integrates with external verification sensors - and can trigger and aim them as required. The system is fully interoperable with other defensive and active technologies, and can be integrated into any C^4 system.

Technical Specifications

Main Layers

- Self-powered intelligent sensors
- Rugged regional controllers
- Communication command and control center

The local units gather data, handle wireless LAN management, and enable the use of an adaptive algorithm. The control center handles dozens of bases, covering hundreds of sensors, and provides full data analysis and record-keeping.

Communication

Supporting wired, wireless, and mixed mode deployment, SAND's bi-directional, ultra low power communication allows remote adjustments and activation of various types of apparatus on-site.

Models

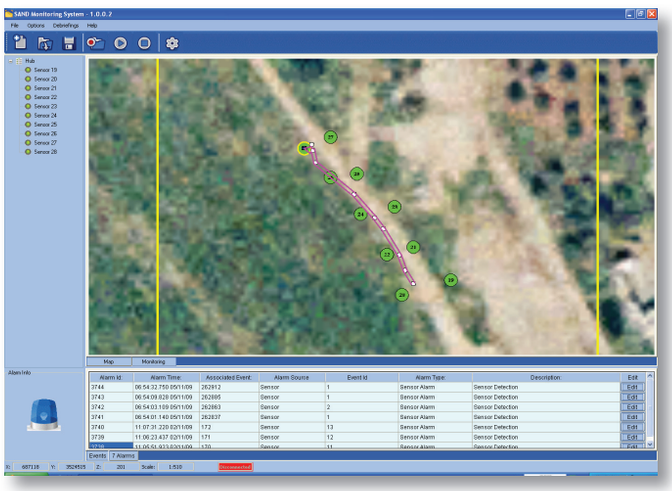
- Up to 10 years of continuous operation, high capacity and high duty cycle communication, 170mm diameter
- Up to 7 years of continuous operation, medium duty cycle communication, 120mm diameter
- Up to 5 years of continuous operation, low duty cycle communication, 55mm diameter, slim design
- Continuous operation according to user requirements, low profile, special-featured unit for military/tactical use

Features

- 24/7 remote wireless, non-line-of-sight monitoring
- Detects all human and vehicular movements
- Easily deployed and operated
- Very low power consumption
- Very low false alarm rate
- Interoperable with all other sensor technologies
- Cost-effective and rugged design
- Field-proven, operational
- Operates in range of ISM frequencies

Major Advantages

Exceptionally reliable, SAND's sophisticated algorithms - together with its unique approach - ensure an almost zero false alarm rate. Requiring no special skills or know-how, no tools, and no infrastructure, the sensors are easily deployed and operated by regular tactical units. Advanced energy-saving techniques assure remarkably long battery life. Hermetically sealed in high pressure-proofed metal casing, the all-in-one units are well protected from environmental damage including moisture, corrosion, electromagnetic fields and other disturbances. Once the sensors are positioned, they can remain in place, operating dependably, for up to ten years. Globally field-proven, the system is currently in operation at a number of locations around the world.



Elbit Systems Land and C4I - Tadiran

Elbit Systems Land and C4I - Tadiran Ltd.
5 Hagavish St. Netanya 42507, Israel
E-mail: landc4itadiran@elbitsystems.com www.elbitsystems.com/landc4i-tadiran

This brochure contains Elbit Systems proprietary information © 2009 Elbit Systems Ltd. and others

EP09-MKT-029